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BOOK REVIEWS.

Wages in the United Kingdom in the Nineteenth Century. By ARTHUR L. BOWLEY. Cambridge: at the University Press; New York: The Macmillan Company, 1900. 8vo, pp. vi + 148. \$2.

THIS work contains what the author modestly calls "notes," prepared for lectures delivered in 1898, but "extended and entirely recast" before publication. Mr. Bowley has been for some years engaged in studying the available data for the statistics of wages in the United Kingdom, and the book now presented to the public contains some matter previously published in the *Journal of the Royal Statistical Society*. The results here given by no means exhaust all the materials that exist, but the author trusts that the book will give a useful presentation of preliminary results, invoke helpful criticism, and "illustrate the various questions that arise in the study of wages." Mr. Bowley does not attempt to write "the general history of wages" during the present century; but passes over questions of cause and effect, and addresses himself to the purely statistical object of ascertaining "the total amounts and the averages of wages" from decade to decade.

The first chapter deals chiefly with methods of investigation. Here the author distinguishes the "statical" from the "kinetic" method. The former method, which is more commonly followed, "consists in making comprehensive estimates for given years," thus obtaining averages of wages and the distribution of workers according to the rates of remuneration received. Mr. Bowley follows almost exclusively the second, or "kinetic," method, which investigates "not wages themselves, but their rates of change." This has the advantage of enabling the investigator to use sequences of figures obtained by different observers, and to combine these in such a manner as to show average rates of change; whereas "statical" wage tables prepared by various authorities, probably by different methods, would not fairly admit of combination and comparison. A further advantage of the "kinetic" method is that it diminishes, or even eliminates, errors that arise from

the personal bias of the observer or from failure to take account of the various deductions or additions which affect so materially the actual remuneration of the laborer.

The second chapter is devoted to a consideration of the chief sources of information and the nature of the materials available. There exists "a great abundance of official material" in the form of parliamentary reports and papers dealing with the condition of the working classes. In order to examine this completely "it would be necessary to overhaul some 5000 volumes, each of 500 to 1000 pages." Then there are scattered data in scientific journals, fugitive pamphlets, and the publications of trade unions and other organizations. Finally we have the important works of Eden, Young, Baines, Porter, McCulloch, Brassey, Baxter, Levi, and Giffen. In the quest for information, the author states, "the general aim to keep in view is the discovery of sequences of figures, the most valuable being those compiled by a single authority from similar records for a series of years."

The next chapter contains a valuable discussion of the meaning and use of the term "average wage." Despite diversities in the capacity and occupation of laborers, there are causes which, at the same time and place, bring it about that "the wages for equal effort of men of the same capacity are equal to one another" (p. 18). Since this is so, it is "useful to watch the change of the rate of wages paid for a certain degree of skill, even though the number of persons paid at this wage may be but a very small proportion of the total number doing similar work." Economic friction undoubtedly prevents the realization of complete uniformity of wages paid "for equal degrees of skill." Yet experience shows that the movement of laborers from one occupation to another maintains such uniformity in the long run. More than this, we find that "the distribution of numbers in different degrees of ability is to some extent invariable," as Mr. Galton has shown; so that, "if we know the distribution of wages for different degrees of skill at any one date, we may reasonably expect that the distribution at any other date will be similar." Of course, changes in education and other causes that affect skill may, over a long period of time, produce a somewhat different distribution (pp. 20, 21). Mr. Bowley discusses interestingly the difference between the average wage, the median wage, and the wage most frequently paid; and suggests important fields for investigation. In this

work, however, he is compelled to confine himself to a study of average wages.

Proceeding to the study of wages in different occupations, Mr. Bowley discusses first the course of agricultural wages. Prior to 1840 the changes in economic conditions were so many and so rapid that agricultural wages fluctuated greatly, and all the statistics for the time "must be handled with great care" (p. 31). Yet averages computed by different writers agree fairly well (p. 34). Mr. Bowley's results show, for the period subsequent to 1840, an increase of wages amounting to 33 per cent. (p. 130). This was secured, however, prior to 1878. A special study of agricultural wages in Sussex illustrates excellently the difficulty of the problem and the care that must be exercised in such investigation. The study of wages in Ireland and Scotland develops special difficulties; but, for the latter country, averages are secured for three classes of agricultural laborers. These figures show a constant increase of wages (p. 57).

We may pass over a chapter devoted to wages in two special occupations, and come to Mr. Bowley's examination of the general estimates formed by various writers who have studied wages in the United Kingdom. The earliest estimate was made by Colquhoun, for the year 1803; and the latest are those of Baxter, Levi, and Giffen. From all of these the author constructs a table, according to the "statical" method, which he presents as "purely tentative." This shows an increase of weekly wages from 13s. 6d., in 1795, to 21s. 4d., in 1867, and to 25s. 6d., in 1897. These results, while doubtful, may be compared with those finally reached by Mr. Bowley.

The author now proceeds to present data for the seven distinct trades which, with agriculture, supply the materials for his computations. In the printers' trade the records are complete and satisfactory (p. 76). Statistics of seamen's wages are complete for the period after 1848 (p. 77). In the building trades the figures are less complete, and a considerable amount of estimating is necessary (pp. 88, 92). The wages paid to coal miners present many difficulties (pp. 96-100). The author's method is to ascertain the average daily wage and to multiply this by "the number of days that are considered at the time and place to constitute full work" for the normal week (p. 101). In this way weekly rates are calculated; but even then the results are sometimes "patchwork" (p. 107). In the cotton and woollen industries satisfactory data are hard to secure prior to the general introduction

of the power loom at about 1830 (p. 113). Even after that date considerable calculation and interpolation are necessary (p. 118). In the iron trade statistics of wages are hard to gather because such great changes have taken place in the character and subdivision of the separate branches of employment (p. 120). Mr. Bowley considers it sufficient to base his statistics upon these leading industries, because the minor trades are often so unimportant that their result would not affect the general average materially, and because the shifting of laborers from one employment to another produces a general uniformity of wages (p. 124).

In the eight leading industries considered, Mr. Bowley finds an increase of from 50 to 100 per cent. between 1780 and 1816, an increase, however, which was often counterbalanced by an increased cost of living (p. 125). From 1820 to 1840, despite fluctuations in the various trades, tentative results show a slight decline (p. 126). The general average of wages from 1840 to 1891 is shown in the following table by a series of index numbers, in which the wages of agricultural laborers for 1891 are taken as 100 (pp. 130, 132).

1840 = 61	1877 = 94
1850 = 61	1880 = 89
1860 = 73	1883 = 92
1866 = 81	1886 = 90
1870 = 83	1891 = 100
1874 = 97	

If agriculture is excluded from the list, the seven other industries show practically the same results that are presented in the table just given. All of the trades show a marked increase of wages since 1840, and all except woolens, iron, and agriculture, show at least a partial recovery of wages after the fall which took place between 1874 and 1880. Since Mr. Bowley takes express pains to present his calculations as tentative, and explains in each case the difficulty and uncertainty which attend his work, criticism of the results is disarmed. We may welcome his book as a valuable contribution to the wage statistics of the United Kingdom, and express the hope that he may be enabled to carry out his intention of making his investigations more complete and exhaustive.

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